

REMARKS

Claims 1 – 11 and 29 – 38 are pending. Claims 1 – 7 and 29 – 38 were rejected as being anticipated by U.S. Patent Publication No. US 2005/0029503 to Johnson ("Johnson"). Claim 8 was rejected as being unpatentable over Johnson in view of U.S. Patent No. 6,673,648 issued to Lowrey ("Lowrey"). Claims 9 – 11 were objected to as depending from a rejected base claims, but indicated as allowable subject matter.

Claim 9 has been amended to recite the limitations of the base claim and intervening claims from which it depends. It is believed that this amendment places claims 9 through 11 in condition for allowance.

Claim 1 relates to a phase memory cell having a thin conductive film, a layer of phase change material, and an interface between the conductive film and the phase change material. Claim 1 has been amended to recite that the thickness of the conductive film is less than the thickness of the phase change material at the interface. This limitation is not shown in Johnson. As shown in Johnson's Figure 1, and all subsequent figures, the thickness of the phase change material 36 is equal to the thickness of the electrode 34 at the interface between the two. Johnson teaches that phase change material 36 is conformally grown on the sidewalls of electrode 34, meaning that the thicknesses will be substantially identical (see Johnson at Paragraph 28). As such, Johnson fails to teach or even suggest a memory cell wherein the thickness of the conductive film is less than the thickness of the phase change material at the interface. In fact, by disclosing conformal growth of the phase change material on the sidewall of the electrode, Johnson teaches away from Applicants' invention in which the conductive

film is thinner than the phase change material. Hence, claim 1, as amended, is patentable over the cited reference.

Claims 2 through 8 are patentable over Johnson by virtue of their respective dependence on claim 1 as well as for their further defining recitations. In light of the above arguments with regard to base claim 1, Applicants respectfully traverse the rejection of claims 2 through 8 without addressing those claims specifically. This should not be construed as acquiescence to Examiner's assertions regarding those claims and Applicants reserve the right to specifically traverse those rejections in the future.

Claim 29 relates to an improved phase change memory cell having an interface between a layer of phase change material and a thin conductive film. Claim 29 has been amended to recite that the thin film thickness is less than the phase change material thickness at the interface between the two. Johnson does not disclose this element. Rather, Johnson shows in Figure 1, and all subsequent figures, that the thin film thickness and the phase change material thickness are the same at the interface. In fact, by teaching that the phase change material 36 is conformally grown on a sidewall of the electrode 34 (see Johnson Paragraph 28) Johnson requires that the thicknesses be the same. Hence, claim 29 as amended, is neither anticipated by, nor rendered obvious over Johnson.


Claims 30 through 38 are also patentable over Johnson, by virtue of their dependence on claim 29 as well as their respective further defining limitations. In light of the above arguments with regard to base claim 29, Applicants respectfully traverse the rejection of claims 30 through 38 without addressing those claims specifically. This

should not be construed as acquiescence to Examiner's assertions regarding those claims and Applicants reserve the right to specifically traverse those rejections in the future.

Applicants respectfully submit that claims 1 through 11 and 29 through 38, as amended herein, are patentably distinct over the prior art of record. A prompt indication of the allowance of the claims and passage of the present application to issuance is respectfully requested. Examiner is invited to contact the undersigned to address any questions or concerns that might expedite the allowance of the present application.

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Respectfully submitted,



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